100



Upper Animas Mining District EPR Management Briefing April 8, 2010 Updated June 30, 2010

Background

- Mining district within San Juan County -13 major volcanic calderas highly mineralized and extensively mined from 1874 to 1991. Three drainages: Mineral Creek, the Upper Animas, and Cement Creek, all of which flow to the Animas River.
- Many mine sources due to 1500 mine sites within 186 sq miles. The area had four railroads, three smelters, and over thirty mills.
- San Juan County the smallest and one of the most economically challenged in Colorado; 150+ jobs lost in 1991
- Approximately 85% of the land in the Upper Animas Basin is under public ownership. A large number of abandoned orphan mine sites are located on U.S. Forest Service (FS) or U.S Bureau of Land Management (BLM) property; however, there are many private patented claims interspersed throughout the basin.
- In 1997, the Department of Interior began an Abandoned Mined Lands Initiative (AML) to study two pilot areas; to better understand how to handle problems these sites may create. One BLM AML focus area is the Upper Animas Basin. BLM/USFS have had a significant role in the non-time critical removal actions over the years.
- The Animas River begins high in the San Juan Mountains, above Silverton, in southwest Colorado. The river flows south through Durango for almost eighty miles to the New Mexico border. It continues nearly thirty more miles, meeting the San Juan River in Farmington, New Mexico.
- Standard Metals Corp. (SMC), then Sunnyside Mining Corp. had several water quality-related and mine waste discharges, tailings releases, notices of violation, and eventually a Consent Decree with CDPHE WCQD. Sunnyside and WQCD agreed to pollution trading to deal with water quality issues.
- There have been remediation efforts in Mineral Creek, the Upper Animas, and Cement Creek, but Cement Creek is still having a negative impact on the TMDL compliance point, known as A72.
- In the Cement Creek drainage, active water treatment began by SMC in 1970s and was updated over the years by Sunnyside. Since 1996, the American Tunnel has had three bulkheads installed, flow has decreased from 1,600 gpm to about 150 gpm. The Red & Bonita Mine, and other upgradient adits' and seeps discharges are now making up the difference in the American Tunnel flow. Gladstone's active water treatment stopped in 2005; settling ponds reclaimed in 2006.

Regulatory Involvement and Stakeholder Group Formation

- Eighteen months of negotiations between federal, state and private interests after EPA thought about watershed-wide NPL designation in the mid-1990s. Silverton citizenry and their relatives who were employed by the mining companies have always been against NPL listing or other regulatory involvement in the watershed.
- 1994 the ARSG formed due to the mining district's numerous source areas, historic mine discharges and tailings releases, and more recent documented CWA and NPDES violations, which made the area ripe for regulation and enforcement actions.
- Formation was also in response to the Colorado Water Control Division's (WQCD) reevaluation and upgrading of water quality standards for the Upper Animas River Basin.
- The ARSG has developed a watershed plan, and Use Attainability Analysis (UAA), dated January 2001. The drainages have had TMDLs developed.
- The ARSG studied 1,500 mines, focused on 173 draining mine adits and 157 mine waste sites, then identified about 33 adits and 32 waste sites to prioritize. These were judged to be the highest ranking contributors of metals in the Animas River. The ARSG prioritized their actions based on:
 - o 1.Technology needed for remediation,
 - o 2. Funds, and
 - o 3. Property access.

EPA Involvement

- 1994 2004 Carol Russell represented EPR-EP in the ARSG.
- In 1996, the Regional Administrator agreed to forego listing as long as the ARSG made progress in mine site remediation and water quality improvements. Since 1994, EPA has regularly attended the monthly Animas River Stakeholders Group meetings, had regular talks with the County Administrator, Town/County Planner, and community members. This has helped EPA (Carol Russell before me) find out how best to support the community.
- 2003 2004 EPA's Max Dodson, Ron Cattany of DRMS (formerly CDMG) and Howard Roitman (CDPHE) created a Memorandum of Understanding for the San Juan Mountains Focus Area, a regional initiative to better coordinate federal and state programs where CWA, CERCLA, SDWA, and RCRA were involved.
- Internally, EPR management wanted One Face in a Watershed to support Land & Water Remediation, Reuse, Revitalization, and Restoration (LR⁴).
- 2005 Present In support of LR^{4, I} have been involved as EPR Site Assessment Manager, watershed representative, and Brownfields Project Manager.

 Objectives:
 - Keep a relationship with the Silverton, San Juan County, and ARSG going.
 - Identify areas that still need work and where CERCLA may be the appropriate tool.
 - Assist ARSG with water quality data collection in a significantly impacted portion of the watershed.

- Presently, EPA's regional team consists of Site Assessment and Brownfields
 (Sabrina Forrest), with backup and technical support as needed;
 primarily from Steve Way and Richard Sisk. I attend the monthly
 stakeholder meetings and stays in touch with locals about ongoing
 and new projects.
 - EPA was involved in the successful Cleanup at the Rose Walsh Smelter – EPA provided Targeted Brownfields Assessment support followed by successful Cleanup Grant for affordable housing project.
 - EPA Site Assessment developed a Sampling and Analysis Plan for water quality sampling because I had the technical ability and wanted to be able to weigh in on how to characterize the environmental issues for EPA and the ARSG. We are:
 - Collecting monthly water samples and flow measurements; and
 - Assessing changes in water quality and metals loads over time, since flows and loads have not been consistently evaluated, esp. since bulkheads were installed and the WTP was removed.

Questions that EPA and the stakeholders want to answer are:

- PSQ1 What are the seasonal and annual variability in water chemistry, metals loads, and discharges from the upper Cement Creek sources of mine-impacted water sources?
- PSQ2 Can the Cement Creek water quality data be used to quantify impacts to the Animas River?
- PSQ3 Are there additional seeps and springs emanating and impacting loads in Cement Creek and the Animas River;
- PSQ4 Can it be determined if, and when equilibrium has been reached in this portion of the watershed?
- PSQ5 Can these data support stakeholder input and decisions on the future design and cost estimates for a water treatment system?
- PSQ6 -Can these data support stakeholder input and decisions on a possible micro hydroelectric power plant to be used to power a water treatment system?

Stakeholder Process History

Those involved include:

- Animas River Stakeholder Group (ARSG)
- Bureau of Land Management (BLM)
- Colorado Department of Public Health and Environment, Hazardous Materials & Waste Management Division (HMWMD)
- Colorado Department of Public Health and Environment, Water Quality Control Division (WQCD)
- Colorado Division of Reclamation, Mining & Safety (DNR DRMS)
- Colorado Goldfields Inc.
- Gold King Mines Corp. (GKM)
- Salem Minerals Inc. (SMI)
- San Juan Corp. (SJC)
- San Juan County
- Silver Wing Company Inc. (SWC)
- Southwest Water Conservation District (SWCD)
- Sunnyside Gold Company (SGS)
- Trout Unlimited (TU)
- USDA Forest Service (USFS)
- U.S. Environmental Protection Agency (EPA)
- U.S. Geological Survey (USGS)

Stakeholder Successes

- ARSG-lead cleanups in the Animas and Mineral Creek have improved water quality and habitat near Silverton and downstream to the New Mexico state line. Salmon flies have been migrating upstream on the Animas River from New Mexico to the 32nd Str Bridge in Durango.
 1) The Animas River Stakeholders Group in the San Juan Mountains of Colorado coordinated and conducted extensive water-quality and benthic macroinvertebrate sampling showing improvements to the aquatic ecosystem after remediation
- Last fall CDOW did a fish survey in Maggie, Minnie, and Cunningham Gulches which haven't been surveyed since the 80's.
 CDOW found a significant increase in population density and size classes. Also productivity was in the 50 to 95 lbs./acre in the three streams.
- Ongoing support for ARSG by local community and local governments, Southwest Water Conservation District, and the maintenance of good monthly meeting participation.
- Development of a Good Sam web site and legislative efforts including lobbying in DC via ARSG and WQCC member Peter Butler and the SWCD.

- Commitment by ARSG and the BLM to a new water treatment plant constructed at Gladstone. This may be in the form of a demonstration facility.
- ARSG and DRMS are planning for two more significant cleanups in the Mineral Creek drainage this year: Silver Ledge and Koehler
 - Examples and some dollar amounts of mine waste cleanups by:
 - BLM/USFS,
 - ARSG using NPS 319 grant \$\$ (DRMS support)
 - Mining Cos.

Challenges/Ongoing Issues

- From ARSG perspective, they recognize there are ongoing water quality issues in Upper Cement Creek, but inability to address due to lack of Good Sam provisions that will protect from 3rd party CWA suits.
- Lack of water treatment in Gladstone is impacting the TMDL compliance point below Silverton at A72.
- Water quality flow and loads have been changing since the last bulkhead went into the American Tunnel (2002).
- The worst sources are the Gold King Mine 7 level; Red & Bonita Mine, American Tunnel, and the Mogul Mine (Grand Mogul to lesser degree).
- From EPA perspective, the remaining areas that need addressed may be NPLcaliber, but we don't have community support at this time.
 - Data Gap Analysis for Targeted Listing Viability indicates there are 28 unremediated sources within the Cement Creek drainage totaling about 146,000 cubic yards of mine-related waste, some near or in surface water. Metals of Concern: As, Cu, Cd, Pb, Mn, Zn.
 - Sources and sediments would need resampled for and HRS package; however, I don't plan to do that until we know where targeted listing would best be done.
 - Some areas may be ripe for EPA and State efforts in 2010? 2013;
 - Funds could come from SMC special account funds BLM has same settlement amounts (about \$130,000 at this time) and BLM and EPA have discussed prioritizing the same sites to get the biggest bang for the buck there are several good candidates in Upper Cement Creek with private ownership.
 - Mogul, Grand Mogul, Gold King 7 level primarily one private owner with re-mining interest with whom Steve Way and Richard Sisk have experience.
 - o Red & Bonita owners have been identified and may do work with OSC as a removal action. More property ownership details are needed.

See the Sungside Hos again Calculate load reduction using Technol A, B, C and take to Wee Planned PA/SI - KittiMac Tailings (privately owned) in the Animas drainage 5-6 miles upstream of Silverton PRP pearch Possible SI or removal action: Kendrick & Gelder Smelter – also in/near Cement Creek, but close to town at mouth of creek options wf DRMS/ARSG have actions (319 funded) planned at Koehler Tunnel and Silver Ledge for 2010 and 2011. rough costs Lackawanna Mill TBA may need Brownfields oversight or liaison work with CDPHE remediation \$4 Million from ASARCO Silver Lake settlement in Trust; State lead, but the CDPHE and ARSG are working to identify where those funds could be used, e.g., active water treatment plant somewhere. Can the look at Agreement with viable PRPs – need to do the PRP searches, 104(e), etc. possible sources NPL??? - EPA gave ARSG a Targeted NPL presentation in about of support if the 2008, but some members of the ARSG still unreceptive to Superfund, they still see Summitville and Leadville as the examples for NPL. Some community members think Superfund Cometations associated would be could for the town/county and is needed to address the complicated site conditions and issues. With it sie wol EPA management is allowing for ongoing R8 support to keep our AZARCO funds on other state support 1306 relationship with ARSG members going: Attend ARSG meetings Share data o Be clear with ARSG and County regarding our objectives, ability to support (where and why), and our limitations. Stay involved so that CERCLA can continue to be involved. It may take time for community to see the benefit of Superfund activities. However, given our regulatory mandate and responsibility to protect human and environmental health, EPA management is not willing to watch water quality continue to degrade and want to see movement in the short term. Instations - why find up frost of Visting will secure. I to no natch for Rt. Le there a presumptive or selection remedy scope of remedy What are remedies likely to be ! State - No abouty to do O&M ontride Spend pay be able to contribute & to permitor in thethed group lasting & 1- parsen listing 2 en forcement actions 3 - Walk away